

## REMARKS

In the Office Action of September 25, 2006, the Examiner considered claims 2-5. In this Amendment, claims 2, 4 and 5 have been amended and new Claim 6 has been introduced.

The Examiner has objected to Claim 2 and rejected claims 4 and 5 for formal issues and Applicant asserts that the amendments to the claims overcome the objections and rejections.

Claims 2 and 3 are rejected as being unpatentable over Zielinski (DE 3042609). Claims 4 and 5 have been rejected as being unpatentable over Zielinski as modified by DE '039.

Applicant respectfully disagrees with the Examiner's rejection of Claim 2 because the reference does not teach each recited limitation and no references have been provided which teach the limitations not taught in the reference. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974) (a *prima face* case of obviousness is established only where the combination of cited references teaches or suggests each limitation in the claim). For example, Claim 2 recites:

"the orientation adjusting unit (200) including an imaging means (202) for imaging a leading end (11e/12e) of the polarization-maintaining fiber cables (11/12)...(and) an imaging processing means (203) for identifying the orientation of each of the polarization-maintaining cables (11/12) based on each image of the leading end (11e/12e) of the polarization-maintaining cables (11/12)..."

In comparison, Zielinski inserts the fibers 2, 3 through pins 1, 4, where the fiber ends are disposed within a common sleeve 5. There is no means or mechanism in Zielinski for imaging the leading end of either fiber 2, 3 and thereafter basing the orientation on the imaged ends of the fibers.

Furthermore, Zielinski focuses on the orientation of markings 7, 8 on the pins 1, 4 for determining the orientation of the fibers 2, 3. The markings are related to the orientation of an axial portion of the fibers 2, 3 that is removed from the leading end. Accordingly, Zielinski teaches away from an apparatus that images the leading end of the fibers 2, 3 to determine the orientation of the fibers as claimed. As the reference teaches away from the claimed apparatus, the reference cannot be modified to provide the claimed invention. *In re Leonard R. Kahn*, 441 F.3d 997 (Fed. Cir. 2006) (a reference teaches away when the skilled artisan would be “discouraged from following the path set out in the reference, or would be led in a direction divergent from the path taken by the applicant”; such a reference cannot form the basis of a *prima facie* obviousness rejection). As such, Applicant respectfully asserts that Claim 2 is currently patentable over Zielinski.

On page 3 of the Office Action, the Examiner provides the following two assertions: (1) that the reference "does suggest that the respective assemblies are rotated into alignment with the aid of an image processing means or microscope";

and (2) that "[i]t is extremely well known to use control systems in a wide variety of processes in order to improve the efficiency of a given process."

Applicant respectfully disagrees with these statements by the Examiner and traverses as follows.

Regarding the first statement by the Examiner, Applicant does not find any suggestion in Zielinski which teaches the aid of an image processing means, so the statement is not a correct reading of Zielinski. Furthermore, as indicated, Claim 2 recites significantly more than the use of an imaging processing means. For example, Claim 2 recites that the image process means images the leading end of the fibers. As indicated, Zielinski fails to teach these capabilities and rather teaches away from these capabilities. Furthermore, the Examiner has not provided any reference which teaches an apparatus with such capabilities.

Regarding the second statement by the Examiner, Applicant respectfully asserts that it is not sufficient that aspects of the invention may be found in the prior art. Rather, secondary references such as the skill in the art cited by the Examiner, when combined with a primary reference, must teach the necessary modifications to the primary reference for providing the claimed invention. *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (BPAI 1984) ("the art, without the benefit" of Applicant's specification, must provide the suggestion to

“make the necessary changes in the reference device” and produce the claimed invention). While control systems may have many known applications, the Examiner fails to provide any reference which teaches how to modify the coupling sleeve 5 structure of Zielinski to include the claimed system for imaging the leading ends of the fibers as claimed.

Accordingly, Applicant believes that the Examiner’s statements on page 3 of the Office Action fail to support a *prima face* obviousness rejection of the claims.

Although Applicant believes Claim 2 is patentable over Zielinski, Applicant has amended Claim 2 to recite:

“the orientation adjusting unit including: an imaging means for imaging a leading end of the polarization-maintaining fiber cables, wherein each of said fiber cables is axially parallel to and radially spaced from each other of said fiber cables held in the multi-fiber ferrule clamped by the clamping jig...”

The above recitations further distinguish the invention from Zielinski which requires that the cables be “exactly centered”.

Furthermore, Applicant has added new Claim 6 which recites:

6. (New) The apparatus of claim 2, wherein:  
the image processing means:
  - identifies a set of stressed portions on the end of each of said fiber cables and defines a geometric correlation for each set of the stressed portions;
  - provides a comparison of the geometric correlations for each of said fiber cables to determine the relative orientation between each of said fiber cables; and

determines a required rotation angle for each of said fiber cables from the relative orientation between each of said fiber cables; and  
the orientation adjustment controlling means controllably drives the fiber cable clamping means to axially rotate each of the fiber cables by the respectively determined rotation angle for automatically adjusting the orientation of each of the fiber cables.

Applicant respectfully asserts that none of the recitations of Claim 6 is provided in the cited prior art. That is, none of the references identifies a set of stressed portions on the end of each respective fiber cable, defines a geometric correlation for each set of the stressed portions, provides a comparison of the geometric correlations for each cable to determine the relative orientation between each cable, determines a required rotation angle for each fiber from the relative orientation and then rotates each fiber bases on the respectively determined rotation angle for automatically adjusting the orientation of each of the fiber cables. Without references showing these claimed recitations, Applicant asserts that Claim 6 is patentable over the cited prior art.


In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Docket No. F-8184

The USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency  
or credit any excess payment to Deposit Account No. 10-1250.

Respectfully submitted,

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